

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Update to Parts 2 and 25 Concerning)	IB Docket No. 16-408
Non-Geostationary, Fixed-Satellite)	
Service Systems and Related Matters)	

REPLY OF ONEWEB

WorldVu Satellites Limited, d/b/a OneWeb (“OneWeb”), replies to certain filings addressing OneWeb’s Petition for Reconsideration¹ of the *NGSO R&O* in this proceeding.² In the underlying NPRM, the Commission acknowledged that a primary objective of this proceeding is to “update . . . our rules to facilitate the deployment of NGSO FSS systems.”³ To achieve that goal, OneWeb respectfully submits that the Commission’s decision to apply an unproven spectrum sharing regime to the modern NGSO operating environment warrants reconsideration.⁴

¹ See Petition for Reconsideration of WorldVu Satellites Limited, IB Docket No. 16-408 (filed Jan. 17, 2018) (“*OneWeb Petition*”).

² *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report & Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 7809 (2017) (the “*NGSO R&O*”).

³ *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Notice of Proposed Rulemaking, 31 FCC Rcd 13651, ¶ 1 (2016) (“*NPRM*”).

⁴ *NGSO R&O* at ¶¶ 48-50.

I. THE GLOBAL PUBLIC NOTICE RULE MOST EFFECTIVELY PREVENTS ANTICOMPETITIVE BEHAVIOR

Some parties incorrectly assert that the Global Public Notice Rule described in the *OneWeb Petition* could lead to anticompetitive outcomes.⁵ OneWeb notes the irony of these complaints. NGSO FSS systems are inherently global in nature,⁶ and the framework these commenters repeatedly criticize is precisely how NGSO systems already share spectrum in jurisdictions outside of the United States today. It is therefore curious that some operators, who have been and continue to be guided by ITU coordination policies outside the United States believe that following this same spectrum sharing regime in the United States would increase uncertainty, chill investment, and undermine inter-operator coordination discussions.⁷ Their logic is faulty for many obvious reasons, three of which are discussed below.

First, SETC, SES/O3b, and Viasat each suggest that under OneWeb’s proposed Global Public Notice Rule, systems with higher ITU coordination priority would have no incentive to coordinate with systems with lower priority.⁸ However, the Commission now *mandates* that

⁵ See Opposition of The Boeing Company, IB Docket No. 16-408 at 4 (filed Feb. 20, 2018) (“*Boeing Opposition*”); Opposition of Viasat, Inc. to Petition for Reconsideration of WorldVu Satellites Limited, IB Docket No. 16-408, at 6 (filed Feb. 20, 2018) (“*Viasat Opposition*”); Space Exploration Technologies Corp., Response to Petitions for Reconsideration at 9 (filed Feb. 20, 2018) (“*SETC Response*”).

⁶ See Comments of Telesat on the Petition for Reconsideration of WorldVu Satellites Limited, IB Docket No. 16-408, at 3 (filed Feb. 20, 2018) (“*Telesat Comments*”).

⁷ *SETC Response* at 8-10; *Viasat Opposition* at 6-7.

⁸ See *Opposition and Response of SES Americom, Inc. and O3b Limited to Petitions for Reconsideration*, IB Docket No. 16-408, at 2 (filed Feb. 20, 2018) (“*SES/O3b Response*”); *Viasat Opposition* at 3; *SETC Opposition* at 9-10. OneWeb also notes that Space Norway AS seems to suggest that OneWeb’s proposal “would benefit only those who, perhaps speculatively, submitted an ITU filing at an early stage.” See *Opposition of Space Norway to Petition for Reconsideration*, IB Docket No. 16-408, at 3 (filed Feb. 20, 2018).

NGSO FSS operators “discuss their technical operations in good faith with an aim to accommodating both systems.”⁹ The requirement that operators coordinate in good faith should alleviate concerns about incentives to coordinate.

Second, some parties cite to potential concerns, including those expressed by the Commission, that the Global Public Notice Rule could undermine or chill investment in NGSO FSS systems that lack ITU coordination priority.¹⁰ However, these statements are belied by the current investment climate for NGSO FSS systems in which both OneWeb and OneWeb’s *competitors*—most of whom plan to operate outside the United States and, therefore, not subject to the Commission’s band-splitting proposal—have gathered investors and partners. Simply put, investors are willing to fund systems even without *per se* “priority” under the global ITU coordination regime.

Third, the current ITU coordination regime is actually a multi-priority system, not a single priority system. Each novel system receives its own priority. For example, O3b has its ITU priority, and Telesat has its ITU priority. O3b cannot move to interfere with Telesat, and Telesat cannot interfere with O3b. This is why the system is multi-priority based and provides strong incentives for investment and innovation to create new architectures designed to efficiently use the spectrum without harming prior users. Every applicant has initially designed its system to work with all the prior-in-time applicants (no operator has yet changed its system design related to future applicants), and this has already *encouraged* investment.

⁹ See *NGSO R&O* at ¶ 48; see also 47 C.F.R. § 25.261(b).

¹⁰ *Viasat Opposition* at 3; *SETC Response* at 7.

In O3b's own words:

"In the current processing rounds, O3b and applicants for other NGSO systems have spent considerable time and financial resources to design their constellations to accommodate all other processing round applicants..."¹¹

As Telesat correctly points out, the thrust of OneWeb's proposed Global Public Notice Rule is that "all operators have an incentive to design their systems to mitigate interference with prior filed systems and, if they do so, have certainty that they will have continued access to the spectrum . . . that they need to operate efficiently."¹² Accordingly, OneWeb's proposed Global Public Notice Rule will have no negative effects on any inter-operator coordination discussions—all global systems have been designed to operate under the current international regime.

Conversely, the Commission's band-splitting mechanism creates—and uniquely enables—perverse incentives for later-filed systems. A regime utilizing band-splitting allows later filers to game the system and prevent the pioneers from access to the spectrum that underlies their system and investment. In short, any later-in-time system can reduce the spectrum access of a prior system by half. This would significantly compromise the spectrum certainty that provides operational stability and incentivizes capital investment.¹³

¹¹ See Petition to Deny of O3b Limited, *The Boeing Company and SOM 1101, LLC, Applications for NGSO-Like Satellite Systems in the Ka-band and V-band Frequencies*, IBFS File Nos. SAT-AMD-20171206-00167, *et al.* at 13-14 (filed Feb. 12, 2018).

¹² *Telesat Comments* at 3.

¹³ OneWeb notes that outside the context of the Commission's processing round framework, some applicants have recognized the importance of certainty when arguing against some recently filed NGSO applications. *See, e.g.*, Letter from William M. Wiltshire, Counsel to SpaceX, to Marlene H. Dortch, Secretary, FCC, *The Boeing Company*, IBFS File No. SAT-AMD-20171206-00167 and -00168, *WorldVu Satellites Limited*, IBFS File No. SAT-AMD-20180104-00004 at 1 (Feb. 2, 2018) ("Timely resolution of these issues will give NGSO applicants much greater certainty as they proceed with development of their systems and business plans.").

II. THE ONEWEB PETITION WAS TIMELY FILED AND WITHIN THE SCOPE OF THE PROCEEDING

The *OneWeb Petition* was timely filed, and the question regarding which spectrum sharing regime the Commission should adopt is squarely within the purview of this proceeding.¹⁴ In fact, the Commission explicitly called for comments on “any other standard for assigning spectrum” outside of the bands codified in Section 25.261 of the Commission’s rules.¹⁵ Additionally, the Commission did not treat the Telesat, LeoSat, and OneWeb proposals for a spectrum sharing regime based on ITU coordination priority as untimely requests outside the scope of this proceeding.¹⁶

Moreover, the Commission did not consider and reject OneWeb’s spectrum sharing proposal in the *NGSO R&O* as SES/O3b and Viasat mistakenly suggest.¹⁷ As explained in the *OneWeb Petition*, the Commission misunderstood OneWeb’s proposal that $\Delta T/T$ of 6% should be used as a coordination trigger and not as a band splitting trigger. Therefore, the Commission did not consider and reject the proposal, because the Commission did not fully understand the proposal.

¹⁴ Boeing erroneously argues that OneWeb’s Petition for Reconsideration is untimely because it should have been filed in 2002 or 2003, when the Commission first adopted band splitting requirements for in-line events in the Ku- and Ka-bands. *Boeing Opposition* at 2.

¹⁵ *NPRM* at ¶ 23.

¹⁶ *NGSO R&O* at ¶ 50.

¹⁷ See *SES/O3b Response* at 2; *Viasat Opposition* at 3-4.

Indeed, OneWeb’s submissions in this proceeding constitute a nuanced proposal that is directly at odds with the misguided characterizations offered by some commenters.¹⁸ In particular, OneWeb explained in its Reply Comments that to avoid a “race to the bottom” the Commission should rely on “ITU coordination priority in lieu of band segmentation when applying the avoidance of in-line interference mechanism in NGSO-authorized bands.”¹⁹ In tandem, OneWeb proposed that “the Delta-T (or I/N) criteria should be used to determine the angle necessary for one system to protect another, and vice-versa.”²⁰ Subsequent *ex parte* submissions underscored OneWeb’s position that the Commission should employ a system based on global public notice, with the Delta-T metric as a *coordination* trigger.²¹ However, in the *NGSO R&O* the Commission adopted $\Delta T/T$ of 6% as a *band-splitting* trigger.²²

¹⁸ For example, SETC places great weight on the fact that OneWeb first expressed support for a coordination regime based, in part, on the ITU coordination process (in tandem with a $\Delta T/T$ -based Coordination Trigger) in its Reply Comments, after initially supporting the application of the avoidance of in-line interference mechanism in its Comments. *See SETC Response* at 3-4. Far from being a careless change, of course, fully evaluating pleadings filed in the Comment round and then supporting proposals that have merit (as Telesat and LeoSat’s proposed ITU coordination-based sharing regime did) is the hallmark of responsible and effective notice-and-comment rulemaking.

¹⁹ *See* Reply Comments of OneWeb, IB Docket No. 16-408 at 19-20; 22 (filed Apr. 10, 2017).

²⁰ *Id.* at 24.

²¹ *See, e.g.*, Letter from David Carmen to Marlene H. Dortch, Secretary, FCC, IB Docket No. 16-408 (Sept. 7, 2017) (“OneWeb believes the Commission should consider harmonizing its rules with the ITU and instead utilize the Delta-T criteria to establish an in-line interference event between satellites of different NGSO constellations.”); Letter from Mariah Shuman to Marlene H. Dortch, Secretary, FCC, IB Docket No. 16-408 at 2 (Sept. 20, 2017) (“the appropriate and most equitable basis for inter-operator coordination (once a $\Delta T/T$ of 6% triggers coordination) in the U.S. is priority based on the first public notice of the system.”).

²² The Commission mandated “band-splitting when the $\Delta T/T$ of an interfered link exceeds 6 percent” in the absence of a coordination agreement between parties. *NGSO R&O* at ¶ 49.

Since (i) the Commission’s adoption of Δ T/T of 6% as a band-splitting trigger—not a *coordination trigger*—represents at its core a fundamental misunderstanding of OneWeb’s position,²³ and (ii) the *OneWeb Petition* is a logical outgrowth of the rule adopted in the *NGSO R&O*, the efforts of some parties in this proceeding to characterize the *OneWeb Petition* as a recitation of arguments considered and rejected by the Commission are highly misleading.

III. CONCLUSION

For the foregoing reasons, OneWeb urges the Commission to reconsider its decision to maintain a spectrum sharing regime that is ill-suited to accommodate the modern NGSO operating environment. As described in the *OneWeb Petition*, by adopting the Global Public Notice Rule, the Commission will be providing NGSO FSS operators with critical spectrum and system design certainty while simultaneously encouraging inter-operator coordination. OneWeb respectfully requests the Commission grant the *OneWeb Petition*.

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Respectfully submitted,

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²³ OneWeb notes that at least one Commissioner seems skeptical of the FCC’s adopted sharing mechanism. In particular, Commissioner Michael O’Rielly noted upon release of the *NGSO R&O* that some entities “articulate quite convincingly that [the default sharing mechanism] won’t work at all. I’m not so sure those internally believe it would work as planned if actually triggered. This scheme may need to be revisited on reconsideration. . .” See *NGSO R&O*, Statement of Commissioner Michael O’Rielly.

CERTIFICATE OF SERVICE

I, Mariah Shuman, hereby certify that, on this 2nd day of March, 2018, a copy of the foregoing Reply is being sent via first class, U.S. Mail, postage paid, to the following:

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